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ABSTRACT OF THE DISCLOSURE

Disclosed is a method of polymerization and copolymerization of ethylene, which is carried out in the presence of (a) a solid titanium complex catalyst prepared by the steps of (i) preparing a magnesium solution by contacting halogenated magnesium compounds with alcohol, (ii) reacting the magnesium solution with ester compound having at least one hydroxyl group and silicon compound having alkoxy group, (iii) preparing a solid titanium catalyst component by reacting mixture of titanium compound and haloalkane compound; and (iv) producing solid titanium complex catalyst by reacting the solid titanium catalyst component with mixture of aluminum compound and haloalkane compound, or with haloalkane; and (b) organometallic compounds in Group II or III of the Periodic Table.